WATER QUALITY TEAM MEETING NOTES

October 24, 2000

National Marine Fisheries Service Offices
Portland, Oregon

Introductions and Review of the Agenda.

Mark Schneider of NMFS, WQT co-chair, welcomed everyone to the meeting, held September 12 at the National Marine Fisheries Service offices in Portland, Oregon. The meeting was facilitated by Trish McCarty, who led a round of introductions and a review of the agenda. The meeting agenda and a list of attendees are attached as Enclosures A and B. Please note that some of the enclosures referenced in these meeting notes may be too lengthy to routinely attach to the minutes; please contact Kathy Ceballos (503/230-5420) to obtain copies. McCarty noted that the discussion of how the WQT may change in response to the new Biological Opinion will be addressed at the next WQT meeting.

2. System Configuration Team/Water Quality Team.

Schneider said he had asked the Corps' John Kranda to come to today's meeting to update the WQT on the recent activities of the System Configuration Team, which plans the implementation of modifications at the mainstem projects which affect spill, fish passage and water quality. Many of the projects prioritized by the SCT have a water quality impact, said Schneider; we need a channel of communication between SCT and WQT, so that we're aware of what the SCT is doing, and so that we are available to the SCT if they need technical water quality assistance.

Kranda distributed Enclosure C, the most recent CRFM spreadsheet showing the SCT's prioritized list of mainstem research and implementation projects. Kranda noted that he is the Corps' SCT representative; as you are aware, he said, the Corps manages the CRFM program, the goal of which is to improve fish passage in the mainstem. There is a long list of measures to be implemented, mainly in response to the various NMFS BiOps. This is the prioritized list for the FY'01 CRFM program, Kranda explained; I have highlighted all of the water quality-related items in green. Items highlighted in blue are currently inactive; yellow-highlighted items are water quality-related activities that we are not currently taking action on, said Kranda. He added that the appropriations bill is due to be

signed later this week; Congress is expected to appropriate approximately $80 million for the CRFM program in FY'01.

Kranda spent a few minutes going through this list, touching on each of the items highlighted in green and yellow. Are most of the fast-track items feasibility studies? Steve Hays asked. John Day and Ice Harbor have flip-lips added as a result of the 1995 BiOp, Kranda replied; gas fast track is in the study phase at all of the other mainstem projects.

Schneider said he will talk to Kranda and Hevlin about ways to keep the lines of communication open in the future between SCT and the WQT. In response to a question, Kranda said that, at this point, he doesn't know of any areas where the SCT needs the WQT's technical input, although once the Gas Abatement Study report is released, the WQT's assistance would be welcome. Schneider suggested that any interested WQT participants get on the SCT mailing list, so that they can attend upcoming SCT meetings where water quality-related items will be discussed; he asked any interested WQT participants to contact him or Kathy Ceballos. Schneider added that he plans to attend the SCT's meetings in the future, and will take responsibility for keeping the WQT informed of any water quality-related discussions at SCT.

McCarty noted that, at the November 8 SCT meeting, one of the agenda items will be a presentation on the Corps' Gas Abatement Study report; all interested WQT members are invited to attend.

3. Corps of Engineers Dissolved Gas Annual Report.

Dick Cassidy briefed the WQT on the contents of the Corps' annual dissolved gas report for 2000. Cassidy explained that Schneider had asked him to come to today's meeting to discuss the results from the Corps' 2000 water quality monitoring program; he distributed Enclosure D, a summary of this information, including a map showing the location of the Corps' 42 fixed water quality monitoring stations, minimum and maximum TDG levels at Dworshak, Lower Granite, Little Goose, Lower Monumental, Ice Harbor, McNary, John Day, The Dalles and Bonneville Dams, the number of hours in which the applicable TDG standards were exceeded at each project, and water temperature information through the season at the Anatone gauge and in Lower Granite forebay. Cassidy noted that, on November 3, the Corps is hosting an all-day meeting to review this data in more detail at its Northwestern Division headquarters in Portland.

Cassidy then spent a few minutes going through the contents of Enclosure D in overhead form. Among the highlights of his presentation:

- 2000 was a below-average water year, only 92%-93% of normal at The Dalles. In general, flows at both Lower Granite and McNary were lower than the flows requested by the fish managers.

- Problem areas in 2000 included McNary, where the gas cap was exceeded for a total of 204 hours early in the season, and downstream of Bonneville at the Camas/Washougal fixed monitoring station. Cassidy noted that it was particularly difficult to adjust Bonneville operations to keep gas below 115% at the Camas station in 2000.
- With respect to the success of the cool water releases from Dworshak in 2000, Cassidy said that, once the Dworshak releases began, temperatures in the Lower Granite forebay averaged 2-3 degrees C less than temperatures at the Anatone gauge, which is in the Snake River above the confluence with the Clearwater River.

So on November 3, Water Quality Team members will have an opportunity to provide their input into the Corps' 2001 monitoring program and the annual reporting process? Schneider asked. Correct, Cassidy replied; the discussion at the November 3 meeting will inform both the 2001 monitoring program and annual reporting process. Schneider suggested that any interested WQT participants obtain a copy of the Corps' 1998 water quality annual report (the 1999 water quality annual report has not yet been finalized) in preparation for that meeting; Cassidy said he will let Schneider know where copies of the 1998 report can be obtained.

4. BPA Water Temperature Studies.

Schneider reminded the group that, at the last WQT meeting, there was a discussion of BPA's desire to develop a regional water temperature model; he noted that Tom Morse is the BPA fish and wildlife staffer in charge of that project. Morse distributed Enclosures E and F, documents outlining model selection criteria and the water temperature and flow studies will likely be proposing; he explained that BPA is still attempting to define what exactly it will be doing in this arena. All I really have to give you today is a sense of the direction we think we in BPA's Fish and Wildlife Division will be recommending, he said.

Morse went briefly through the contents of Enclosure F, which lays out the proposed action, the purpose of this action, authority, proposed study schedule, and approach (please refer to Enclosure F for details). He noted that the period of the initial phase of this study is anticipated to be 2001-2008; this effort will be comprehensive, complicated, labor-intensive and very expensive, Morse said.

Morse noted that BPA needs to select its modeling contractor and begin collecting data no later than October 1, 2001; otherwise, a full year of data collection will be lost. This effort will include the installation of Class A meteorological stations at a variety of points in the system, he added, because the key to this study is relating meteorological conditions to water quality conditions in both the past and the future. The data that are collected will be stored in an information base that will be open to everyone, Morse said.

One question everybody has is model selection – that is driving most of the discussion to date, said Morse. Bonneville is not yet ready to select a model; we feel it is more important, at this point, to

concentrate on the appropriate model selection criteria. In all likelihood, the model we select will be based on an energy balance equation, said Morse; it also needs to have an open source code, good model documentation, many capabilities and few limitations. Other attributes BPA will be seeking in whatever model it ultimately chooses include the following:

- Known quality
- Appropriate spatial scale
- Appropriate temporal scale
- Ease of use
- Visualization of results
- Technical support
- Cost
- Model selection and use (quality of data and results)

Morse added that BPA will be placing a heavy emphasis on the collection of quality data; if data quality is poor, he said, then it wouldn't matter if we buy the best model in the world, or the worst.

That's really all I can say at this moment, said Morse, except that BPA will be making a decision soon about the study and modeling direction it will be pursuing. It would be great to be able to model the system from Grand Coulee on down, he added, but we don't know whether or not that will be possible. John Piccininni added that BPA would like to give the states and tribes an opportunity to provide their input before the model is selected. Morse added that time is short, and BPA management will need to decide very soon about whether or not to fund this effort. It would be helpful to have some input on whether or not the approach BPA is considering would be of use to others in the region, Morse said.

What's driving the time crunch? Schneider asked. The beginning of the hydrologic year, Morse replied – we need to be able to anticipate hardware, software and personnel needs, because this will be a monumental effort – at least $500,000 per year, as a rough guess. Essentially, if we don't get this off the ground by October 1, 2001, we'll have to wait another year, Morse said. And when do you need the WQT's input? McCarty asked. Once BPA's scope and funding decisions have been made, Morse replied.

So at the end of three years, BPA will have a model in place – is the goal of this effort to verify the effects of habitat improvements on water quality? Margaret Filardo asked. No, it's to ensure that our obligations under the Biological Opinion are being met, Morse replied – we need to know what effects our actions are having, because we need to account for our expenditures. We also believe this effort will be useful to others in the region, he said. Basically, we need to be able to make informed decisions about the potential effects of actions on water quality in the mainstem; we are also required to monitor the system, under the BiOp, Morse said. And what was NMFS' objective in putting that RPA in the BiOp? Filardo asked. There are actually two temperature-related RPAs, said Schneider; one

calls for the development of a strategy for data collection, while the other calls for comprehensive, long-term monitoring. But what is the overall objective of this effort? Filardo asked – where is all of this going? I can't answer that question precisely, said Schneider, but I believe the answers you seek are in the BiOp language.

Basically, we need a sense of whether or not our actions on the tributaries are having any effect on passage conditions for listed species, said Piccininni. Again, we need a tool that will allow us to evaluate the effects of proposed actions, Morse said – in the past, that has not been well-documented. These would be future potential actions; we would be looking at the effects of those actions on flows, temperatures and passage conditions.

So is this the tool that will be used to assess whether or not tributary actions have met the performance standards in the BiOp? Filardo asked. This would be one tool, yes, Morse replied – the bottom line is that our current data collection lacks integration, and if we can improve that, that, in itself, should be of utility to the region.

The bottom line is that this is what I'm going to be proposing to my supervisors, Morse said – once we know what direction Bonneville will, in fact be pursuing, I will come back to the WQT and provide a further report.

5. Corps of Engineers Model Review.

Cassidy explained that he had asked Ken Yokoyama of the Corps Hydrologic Engineering Branch to attend today's meeting because Yokoyama has been assigned to work with RCC on numerical modeling issues. Yokoyama briefly described his background, and his proposal for a review of water quality models. He noted that the initial models to be reviewed are RMA's HEC-5Q, the Corps' WES CE-QUAL-W2 model, and a series of Danish Hydraulic Institute models. Yokoyama went briefly through the reasons he has chosen these particular models as the initial focus of his review project (all three models are currently being used to model the Snake River, the DHI models have an impressive interface, user friendliness, GIS and animation capabilities, etc.) using a series of overheads (copies of which are attached as Enclosure G).

Yokoyama spent a few minutes explaining the basic features of and differences between these three modeling systems. He then noted that the timeline for his review is not presently carved in stone, because this is more an individual research project than it is a Corps-sponsored project. I'm hoping to complete this initial review phase by this winter -- January 2001, Yokoyama said. And what kinds of things will you be telling us when you complete your review? Joyce Cohen asked. I'll be looking at things like the mechanics of each model, model inputs, model interface utility, advantages and disadvantages of each model and comparative capabilities of each model, Yokoyama replied. Basically, Ken is looking at these models to assess their potential utility to the Corps in the future, Cassidy said. Stewart Rounds noted that USGS maintains a model information website, which compares the features

and capabilities of various models; that address is http://smig.usgs.gov/SMIC.

6. SYSTDG Model.

Mike Schneider updated the WQT on the status of the SYSTDG model. He noted that he has now received the action agencies' comments, and there was nothing in there that would prevent the Corps from proceeding to the next phase, a workshop at which the Corps will share model results. I'm in the process of finalizing a draft agenda for the workshop, and would like the WQT's feedback on the scheduling and content of the presentations, Mike Schneider said. In general, we're looking at a two-day workshop to talk about the model itself, its inputs and capabilities, as well as other issues connected with how it might be applied, he said. We will also discuss what further technical review may be needed before this tool is made available for in-season use, Mike Schneider said. If the WQT has comments or suggestions on the draft agenda, I would welcome them, Schneider said, adding that he will contact Mark Schneider to coordinate the distribution of the draft agenda for WQT review. In response to a question, Mike Schneider said no date has been set for the workshop, at this point; the appropriate date for that workshop is another area where comments and suggestions would be welcome. Realistically, it probably couldn't happen much sooner than January, he said.

7. Next WQT Meeting Date.

The next meeting of the Water Quality Team was set for Tuesday, November 14, from 1-5 p.m. at NMFS' Portland offices. Meeting notes prepared by Jeff Kuechle, BPA contractor.